

**REMARKS**

The present amendments and remarks are in response to the Office Action of June 8, 2005. Claims 1-11 and 42-52 are currently pending. Claims 12-41 have previously been withdrawn.

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, the Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action, claims 1-11 and 42-52 were rejected under 35 U.S.C. 103(a) as obvious over U.S. Application No. 2001/0050031 (hereinafter "Bredt") alone or in view of U.S. Patent No. 6,165,406 (hereinafter "Jang"), or Popoola et al. (abstract only-Journal Materials Research 1992) and U.S. Patent No. 6,238,474 (hereinafter "Unsin").

**Rejections under 103(a)**

Before discussing the obviousness rejection herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing some motivation in a prior art reference to modify that reference, or combine that reference with multiple references, to teach all the claim limitations in the instant application. Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in this rejection.

**Rejections over Bredt**

The Examiner has rejected claims 1-11 and 42-52 as obvious over Bredt alone, in view of Jang, or in view of Popoola and Unsin. Particularly, the Examiner has claimed that "Bredt teaches every single one of applicants claimed ingredients and they are mixed together." However, Applicant submits that the Examiner has not taken into account properly the type of claim being considered. The Applicant is not only claiming the ingredient combination *per se* (as might be the case in a composition claim), but rather, the Applicant is claiming a method for solid free-form fabrication of a three-dimensional

object utilizing the ingredients claimed. As the Examiner is well aware, when evaluating method claims, the steps of the method claim are paramount to the patentability of the claims. Accordingly, Applicant re-asserts the previous argument from the prior Office Action Response, and further clarifies herein the patentable aspects of the presently claimed application.

Bredt discloses a system for printing three dimensional functional parts. The three dimensional composition comprises a mixture of particles including a filler and an adhesive. The composition can also include a fibrous component, a printing aid, and an activating fluid comprising an additional adhesive. It is notable that Bredt describes printing aids as materials that are added to the powder material (i.e. filler) before printing in order to provide light adhesion between the powder grains, thereby reducing dust formation, [See Paragraph 0056]. The Bredt reference is devoid of teaching that it printing aid can be deposited onto the filler material. In other words, the printing aid is admixed with the powder material in preparation for a subsequent printing step.

In contrast, the presently claimed invention provides a several specific steps for solid free-form fabrication of three-dimensional objects. The steps provided are: a) applying a particulate blend in a layer, where the particulate blend can include calcium aluminate particulates and polymeric binder particulates; b) dispensing an aqueous polyol-containing liquid vehicle onto an area of the particulate blend to form hydrated cement in the area, wherein the hydrated cement becomes crosslinked; c) hardening the hydrated cement; and d) repeating steps a) through c) such that multiple layers of the cement are formed that are bound to one another, thereby forming the three dimensional object. Thus, the dispensing step of the claimed invention should be more appropriately paralleled to the “printing” step of Bredt, not to the step where printing aids are added in preparation for printing.

In other words, the poly-containing liquid is dispensed onto the particulate blend and not mixed in with the blend prior to printing as described in Bredt. Bredt, lacks the teaching or the motivation that invention can be modified to create a three dimensional object as instantly claimed. Failure to provide such a teaching or suggestion to arrive at the claimed invention renders the presently claimed invention non-obvious in view of Bredt. Applicant expresses appreciation for the Examiner’s recitation of the law which might be relevant if the present claims were composition claims, however the present

claims are not composition claims. Thus, the Examiner should evaluate each and every step of the method claim provided. Accordingly, Applicant respectfully requests reconsideration of the claims in view of the aforementioned arguments, and withdrawal of such rejections is respectfully requested.

The Examiner has also rejected the same claims over Bredt in view of Jang, or Bredt in view of Popoola and Unsin. However, it is noted that none of these references cure the defect presented by Bredt, in that none teach dispensing an aqueous polyol-containing liquid vehicle onto an area of a particulate blend to form hydrated cement in the area. Thus, these secondary references do not seem to be particularly relevant with respect to the maintaining of a *prima facie* case of obviousness. This being stated, the Applicant feels that some discussion is warranted relating to the rejection in view of Unsin. As part of the rejection, the Examiner has stated that it is routine in the art to add an accelerator to quicken the setting of cement materials. Particularly, the Examiner has cited Unsin for teaching the use of lithium source to accelerate the setting of cement objects. Applicant submits that it might be known in the traditional cement arts to use quick setting accelerating agents, but there is no teaching or suggestion in the primary reference that there is a need or even a desire to use an accelerator. In other words, the Applicant asserts that it is improper to cite Unsin in the context of the presently pending claims because the primary reference lacks any teaching or suggestion related to the utilization of the claimed accelerator in the context of forming three-dimensional objects according to the claimed method. Accordingly, Applicant respectfully requests reconsideration of the claims in view of the aforementioned arguments, and withdrawal of such rejections is respectfully requested.

**CONCLUSION**

In light of the above discussion, Applicant believes that claims 1-11 and 42-52 present allowable subject matter and allowance is respectfully requested.

If any impediment to the allowance of these claims remains, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone the assignee's counsel, W. Bradley Haymond at (541) 715-0159, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 6 day of September, 2005.

Respectfully submitted,



M. Wayne Western  
Attorney for Applicant  
Registration No. 22,788

Gary P. Oakeson  
Attorney for Applicant  
Registration No. 44,266

Of:  
THORPE NORTH & WESTERN, LLP  
8180 South 700 East, Suite 200  
Sandy, Utah 84070  
(801) 566-6633

On Behalf Of:  
HEWLETT-PACKARD COMPANY  
1000 NE Circle Blvd., m/s 422B  
Corvallis, OR 97330-4239  
(541) 715-0159